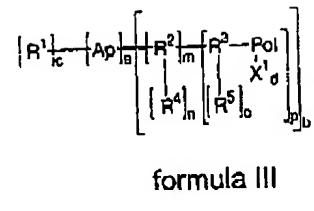
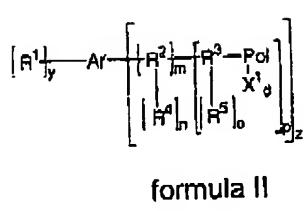
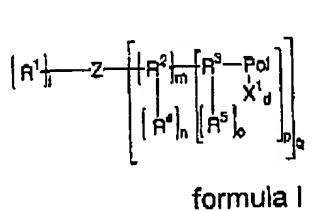


2003/CVG028WO

- 14 -

## Claims

1. A polymer of the formula I, II or III:



in which

Pol is a polymer based on a polyvinyl alcohol, and

Z is a central atom and is an atom from groups 13 to 16 of the Periodic Table of the Elements, and

X<sup>1</sup> is identical or different at each occurrence and is a halogen atom, and

R<sup>1</sup> is identical or different and is hydrogen or a C<sub>1</sub>-C<sub>20</sub> group, and

R<sup>2</sup> is identical or different and is a bridging C<sub>1</sub>-C<sub>20</sub> group between the central atom Z and the initiating unit [R<sup>3</sup>-X<sup>1</sup>] or silicon or oxygen, and

R<sup>3</sup> is identical or different and is carbon or silicon, and

R<sup>4</sup> is identical or different and is a hydrogen atom or a C<sub>1</sub>-C<sub>20</sub> group, and

R<sup>5</sup> is identical or different and is hydrogen or a C<sub>1</sub>-C<sub>20</sub> group,

l is a whole natural number and is zero, 1, 2 or 3, and

m is identical or different at each occurrence and is a whole natural number and is zero, 1, 2, 3, 4 or 5, and

n is identical or different at each occurrence and is a whole natural number and is zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20, and

is identical or different at each occurrence and is 1 or 2, and

p is identical or different at each occurrence and is a whole natural number and is 1, 2, 3, 4 or 5, and

q is a whole natural number and is 2, 3 or 4, and

Ar is an aromatic parent structure having at least four carbon atoms, in which one or more carbons may have been replaced by boron, nitrogen or phosphorus, with preferred aromatic or heteroaromatic parent structures deriving from benzene, biphenyl, naphthalene, anthracene, phenanthrene, triphenylene, quinoline, pyridine, bipyridine, pyridazine, pyrimidine, pyrazine, triazine, benzopyrrole, benzotriazole, benzopyridine,

- 15 -

benzopyrazidine, benzopyrimidine, benzopyrazine, benzotriazine, indolizine, quinolizine, carbazole, acridine, phenazine, benzoquinoline, phenoxazine, which where appropriate may also be substituted, and  $y$  is a whole natural number and is zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20, and  $z$  is a whole natural number and is 2, 3, 4, 5, 6, 7, 8, 9 or 10,  $A_p$  is a cyclic nonaromatic parent structure which has at least three carbon atoms and may also contain heteroatoms from the group of nitrogen, boron, phosphorus, oxygen or sulfur, and  $a$  is a whole natural number and is zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20, and  $b$  is a whole natural number and is 2, 3, 4, 5, 6, 7, 8, 9 or 10, and  $c$  is a whole natural number and is zero, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 or 20, and  $d$  can be identical or different and is zero or one.

2. The polymer of claim 1, characterized in that  $P_0$  is a copolymer based on polyvinyl alcohol.
3. The polymer of claim 1, characterized in that  $P_0$  is a polyvinyl alcohol-polyvinyl acetate copolymer, polyvinyl alcohol-polyethylene copolymer, polyvinyl alcohol-polyvinyl chloride copolymer or polyvinyl alcohol-polymethyl acrylate copolymer or mixture thereof.
4. The polymer of claim 1, characterized in that  $Z$  is a central atom selected form the group of carbon, silicon, nitrogen, phosphorus, oxygen and/or sulfur.
5. The polymer of claim 1, characterized in that  $X^1$  is identical or different at each occurrence and is fluorine, chlorine, bromine or iodine.
6. The polymer of claim 1, characterized in that  $A_r$  is benzene, biphenyl, naphthalene, anthracene, phenanthrene, triphenylene, quinoline, pyridine, bipyridine, pyridazine, pyrimidine, pyrazine, triazine, benzopyrrole, benzotriazole, benzopyridine, benzopyrazidine, benzopyrimidine, benzopyrazidine, benzotriazine, indolizine, quinolizine, carbazole, acridine, phenazine, benzoquinoline, phenoxazine, which if desired may also be substituted.

- 16 -

7. The polymer of claim 1, characterized in that Ap is cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, cyclooctyl or cyclononyl, aziridine, azetidine, pyrrolidine, piperidine, azepane, azocane, 1,3,5-triazinane, 1,3,5-trioxane, oxetane, furan, dihydrofuran, tetrahydrofuran, pyran, dihydropyran, tetrahydropyran, oxepane, oxocane, alpha-glucose and/or beta-glucose.
8. A process for preparing a polyvinyl acetal or polyvinyl acetal copolymer, characterized in that at least one polymer of claims 1 to 7 is used.
9. A polyvinyl acetal or polyvinyl acetal copolymer obtainable by reacting at least one polymer of claims 1 to 7.
10. The use of the polymer of claims 1 to 7 as a protective colloid, emulsifier, binder, for protective skins and adhesives, textile finishes, sizes, metal-protection coatings, for preparing ointments and emulsions, water-soluble pouches and packaging films, oil-, grease-, and fuel-resistant films, hoses and seals, as an additive to shaving cream and to soaps, as a thickener in pharmaceutical and cosmetics products, as an artificial tear liquid, water-soluble fibers or sponges, films, a cement additive, hydrogels for water treatment, and as a polyvinyl alcohol that can be processed in the melt, or for preparing polyvinyl acetal or polyvinyl acetal copolymer.
11. The use of the polymer of claim 9 as a film for producing laminated glass sheets, as a base material for coatings, as a component of adhesion primers, as a textile coating, as a component for adhesives or as a removable coating.